

I Claim:

1. A method for multisequence data representation, the method comprising the steps of:

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identifying, for sequence data, replets that represent parts of said sequence data;

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storing, for each replet, at least one position-match entry that records the data positions of the sequence information over which the identified replet matches the sequence information;

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determining backbone data from the sequence information for which no replet match is identified; and

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representing the multisequence data as backbone data in combination with the position-match entries.

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2. The method as claimed in claim 1, further comprising the step of storing data variations between said identified replets and said related sequence data.

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3. The method as claimed in claim 2, wherein the step of storing data variation is performed using indirection.

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4. The method as claimed in claim 1, further comprising the step of identifying, among said identified replets, meta-replets that can be used to represent multiple replets.

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5. The method as claimed in claim 4, further comprising the step of segmenting meta-replets into multiple parts to account for location-specific variations of the meta-replets in sequence data.

6. The method as claimed in claim 1, further comprising the step of storing replet information in a replet-information table using indirection so that equivalent sequences occupy single storage space.
- 5 7. The method as claimed in claim 1, further comprising the step of identifying subsequences of the sequence data able to be represented by one or more different replets.
- 10 8. The method as claimed in claim 7, further comprising the step of storing only one of said replets able represent the identified subsequences.
9. The method as claimed in claim 1, further comprising the step of identifying patterns common to the identified replets.
- 15 10. The method as claimed in claim 1, further comprising the step of storing multiple views of the sequence data at multiple levels of abstraction.
11. The method as claimed in claim 1, further comprising the step of storing annotation information for sequence data with corresponding position-match entries.
- 20 12. Computer software, recorded on a medium, for multisequence data representation, the computer software comprising:
 - 25 software code means for identifying, for sequence data, replets that represent parts of said sequence data;
 - 30 software code means for storing, for each replet, a position-match entry that records the data positions of the sequence information over which the identified replet matches the sequence information;
 - software code means for determining backbone data from the sequence information for which no replet match is identified; and

software code means for representing the multisequence data as backbone data in combination with the position-match entries.

5 13. A computer system for multisequence data representation the computer system comprising:

means for identifying, for sequence data, replets that represent parts of said sequence data;

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means for storing, for each replet, a position-match entry that records the data positions of the sequence information over which the identified replet matches the sequence information;

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means for determining backbone data from the sequence information for which no replet match is identified; and

means for representing the multisequence data as backbone data in combination with the position-match entries.

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